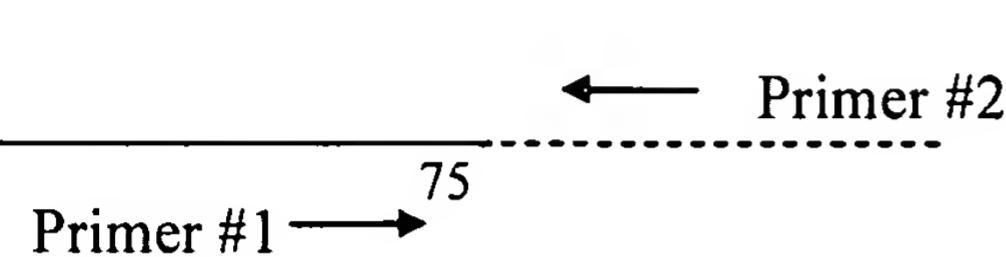




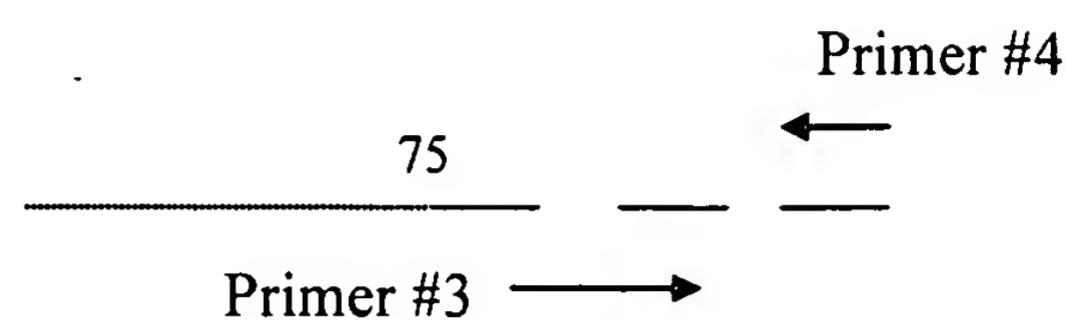
PCR#1

Reaction #1



IFN- α 21b Gene

Reaction #2



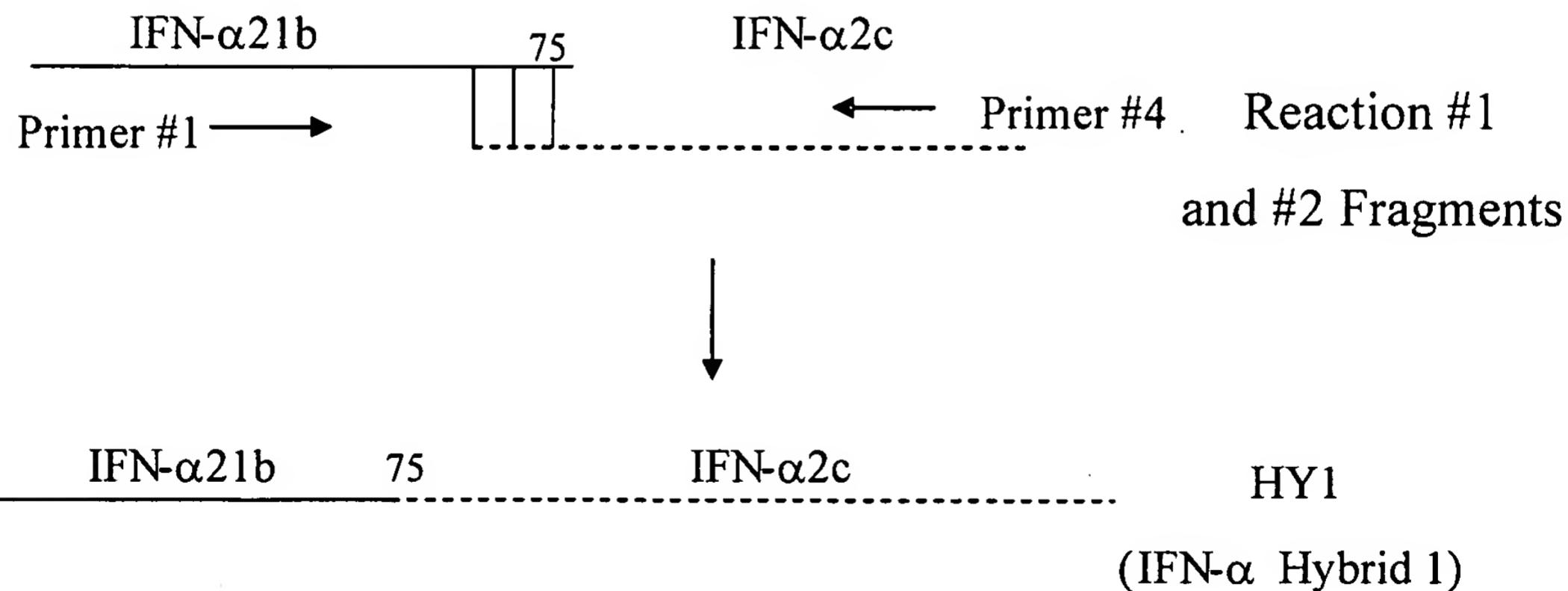
IFN- α 2c Gene

PCR Amplification

α 21b DNA Fragments

α 2c DNA Fragments

PCR#2



Construction of Hybrid #1

FIG. 1A

PCR#1

Reaction #1

IFN- α 21b Gene

Primer #1 →

← Primer #5

95

Reaction #2

IFN- α 2c Gene

Primer #4 (Top): An arrow pointing left from the 95 position.

Primer #6 (Bottom): An arrow pointing right.

95

↓ PCR Amplification

| | |
|----------------------------|---------------------------|
| <u>95</u> | <u>95</u> |
| α 21b DNA Fragments | α 2c DNA Fragments |

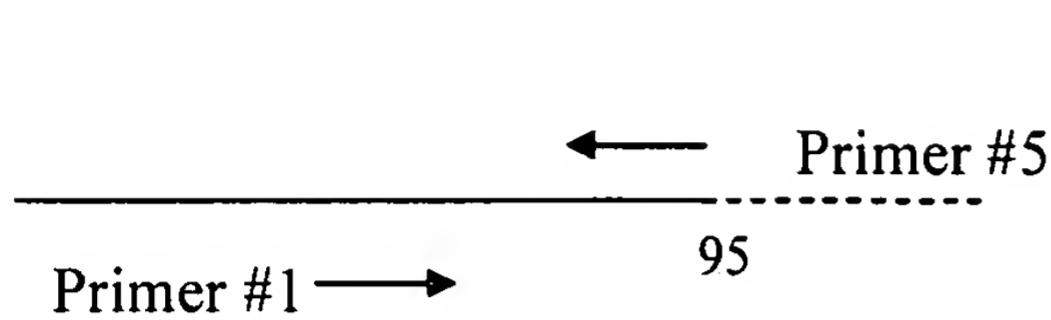
PCR#2

Construction of Hybrid #2

FIG 1B

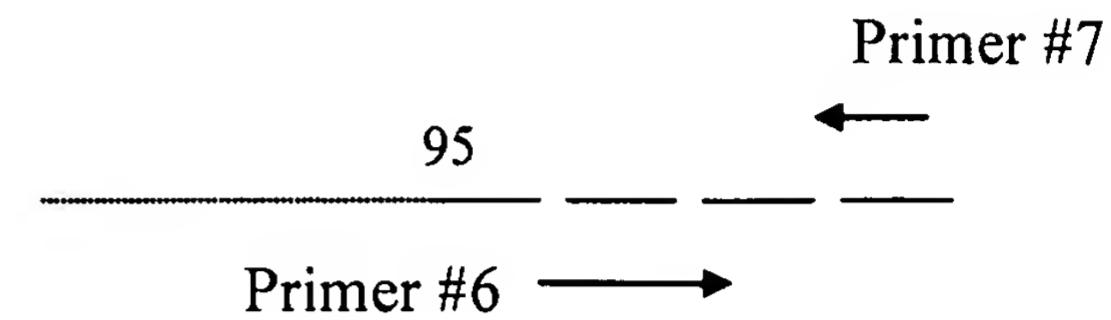
PCR#1

Reaction #1



IFN- α 2c Gene

Reaction #2



IFN- α 21b Gene

↓ PCR Amplification

95
α 2c DNA Fragments

95
α 21b DNA Fragments

PCR#2

IFN- α 2c 95 IFN- α 21b
Primer #1 → [] ← Primer #7 Reaction #1
and #2 Fragments

↓

IFN- α 2c 95 IFN- α 21b HY3
..... (IFN- α Hybrid 3)

Construction of Hybrid #3

FIG. 1C

Replacement Sheet (4 of 10)

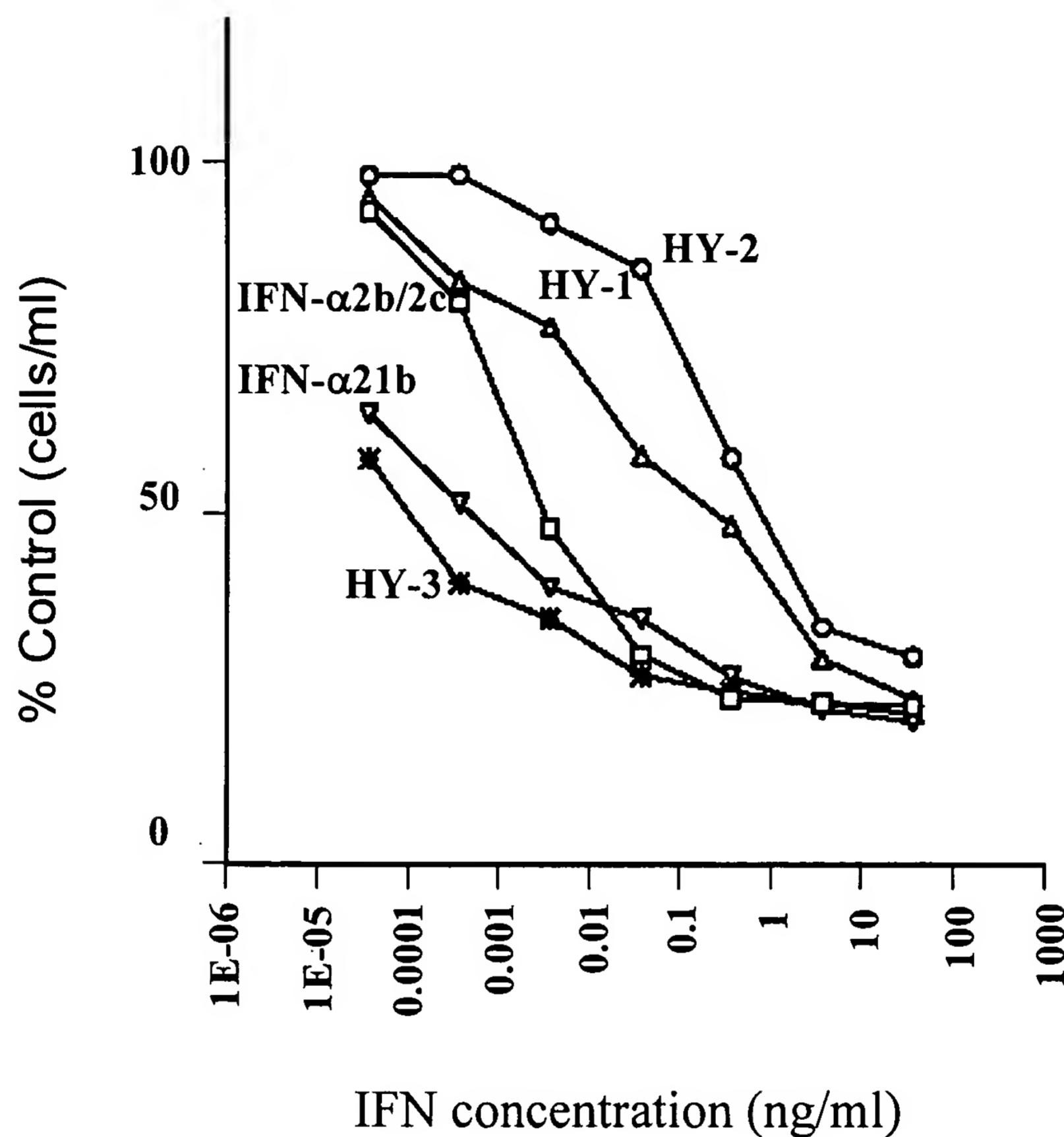


FIG. 2A

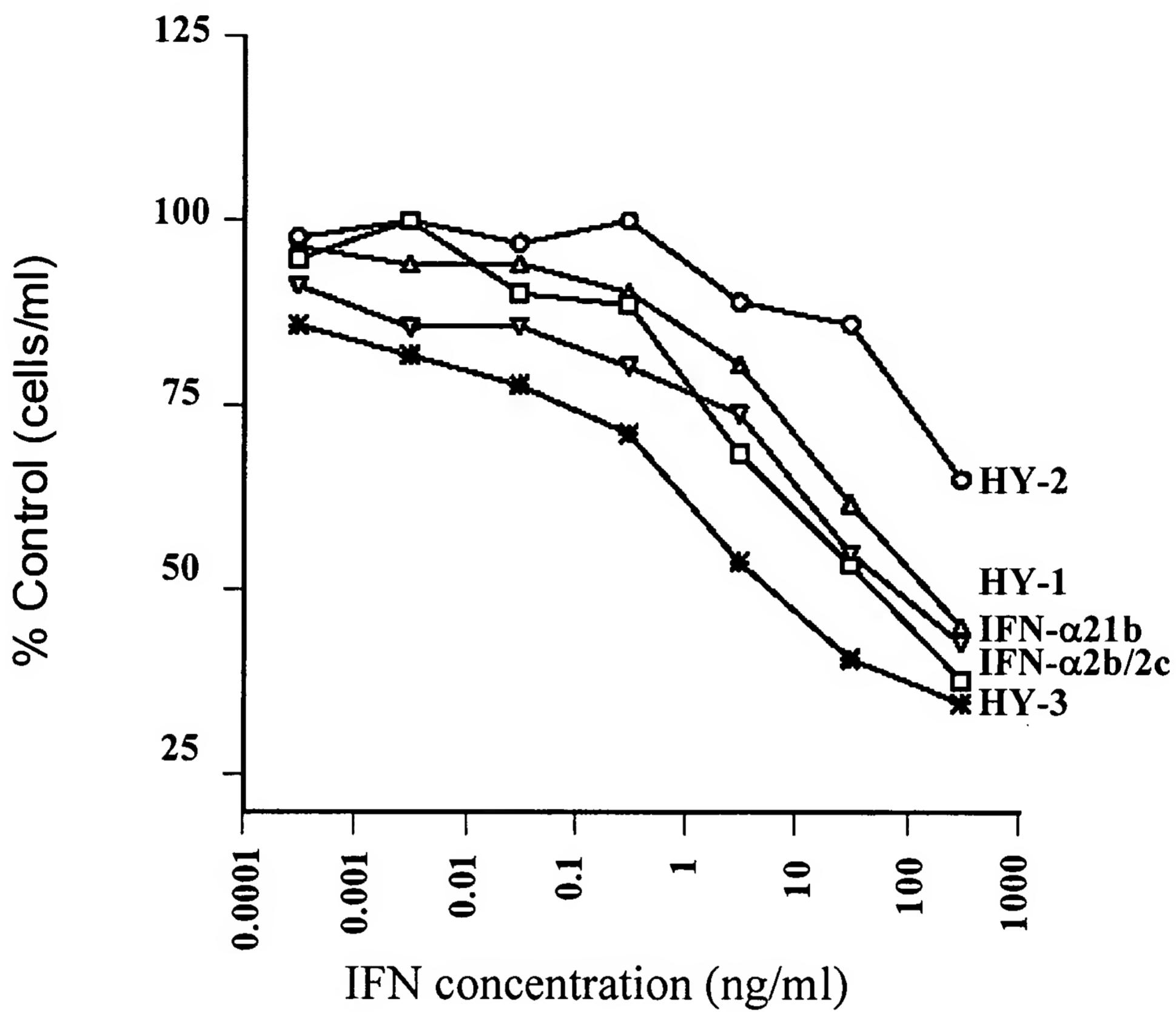


FIG. 2B

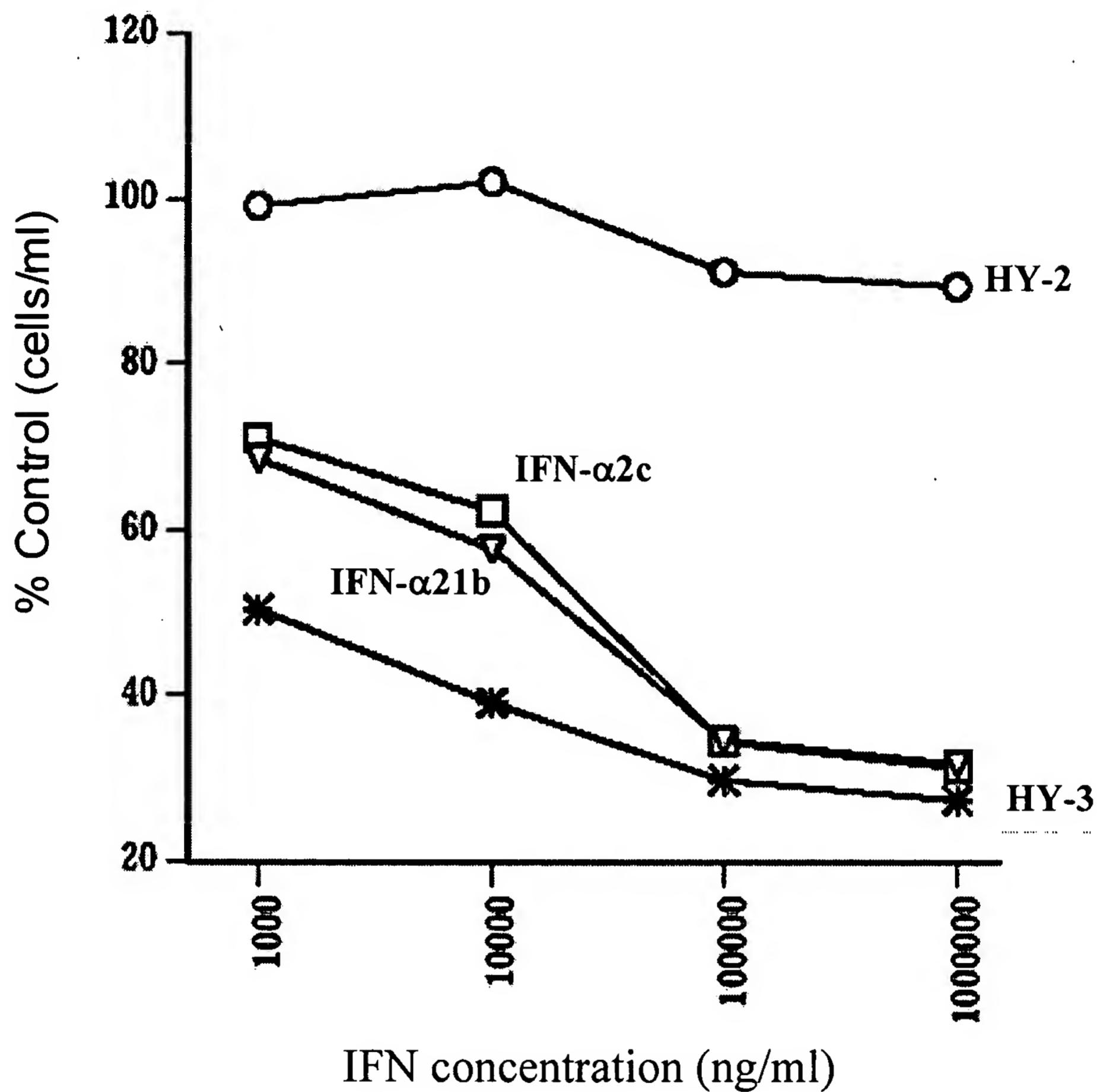


FIG. 2C

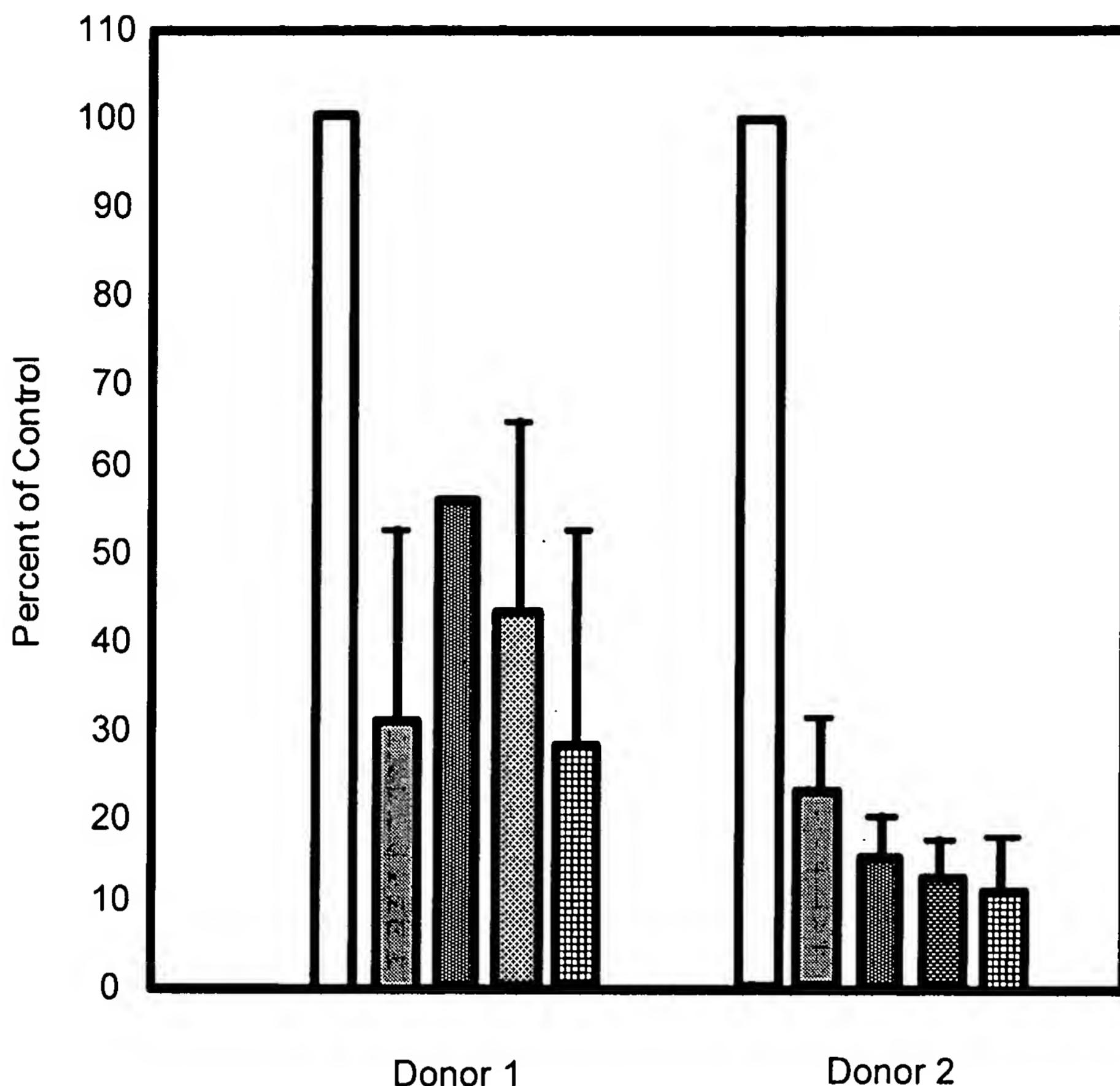


FIG. 3

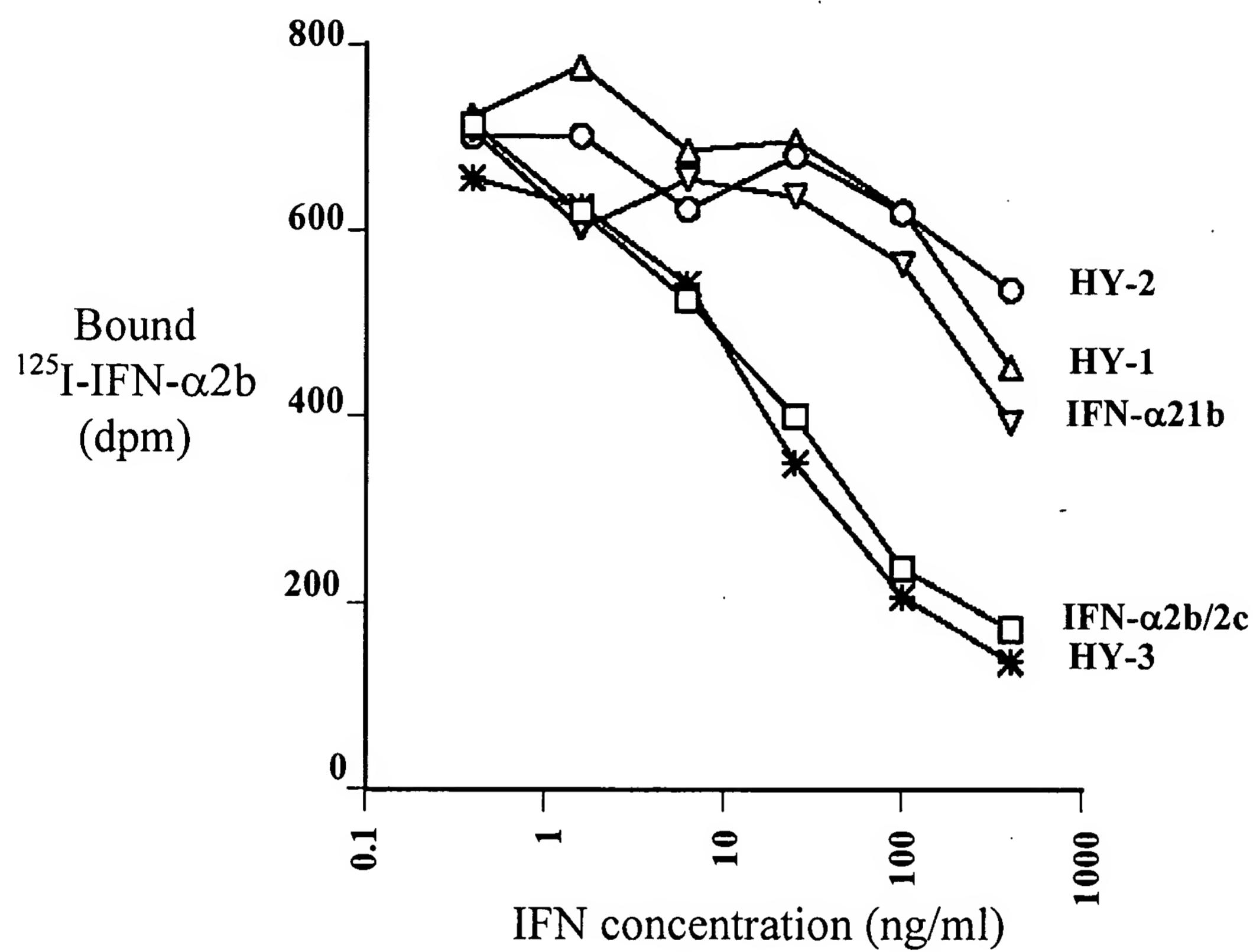


FIG. 4A

Replacement Sheet (9 of 10)

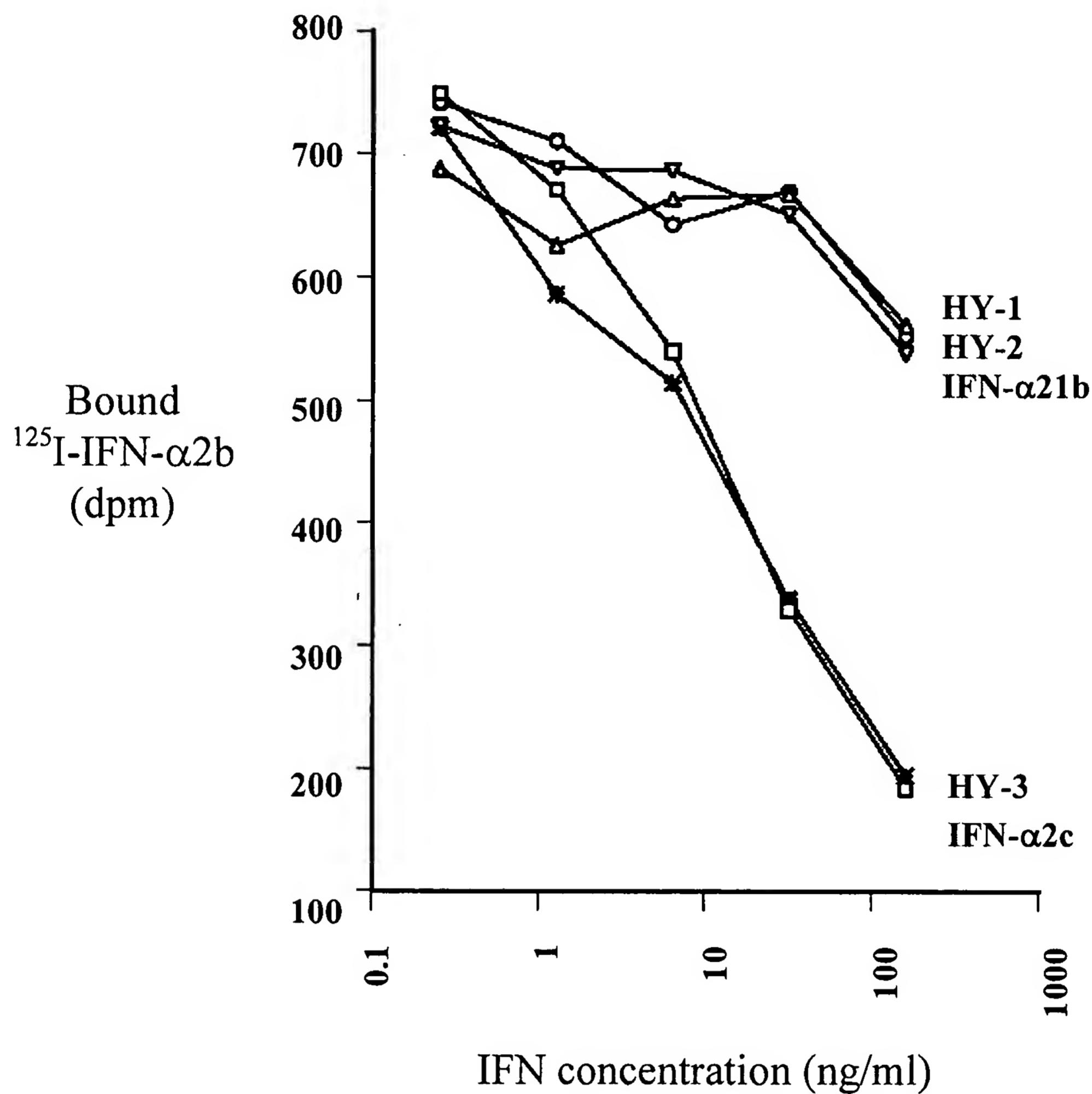


FIG. 4B

Replacement Sheet (10 of 10)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Alpha 2c | C | D | L | P | Q | T | H | S | L | G | S | R | R | T | L | M | L |
| Alpha 21b | C | D | L | P | Q | T | H | S | L | G | N | R | R | A | L | I | L |
| HY-1 | C | D | L | P | Q | T | H | S | L | G | N | R | R | A | L | I | L |
| HY-2 | C | D | L | P | Q | T | H | S | L | G | N | R | R | A | L | I | L |
| HY-3 | C | D | L | P | Q | T | H | S | L | G | S | R | R | T | L | M | L |
| | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 |
| Alpha 2c | L | A | Q | M | R | R | I | S | L | F | S | C | L | K | D | R | R |
| Alpha 21b | L | A | Q | M | G | R | I | S | P | F | S | C | L | K | D | R | H |
| HY-1 | L | A | Q | M | G | R | I | S | P | F | S | C | L | K | D | R | H |
| HY-2 | L | A | Q | M | G | R | I | S | P | F | S | C | L | K | D | R | H |
| HY-3 | L | A | Q | M | R | R | I | S | L | F | S | C | L | K | D | R | R |
| | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 |
| Alpha 2c | D | F | G | F | P | Q | E | E | F | * | G | N | Q | F | Q | K | A |
| Alpha 21b | D | F | G | F | P | Q | E | E | F | D | G | N | Q | F | Q | K | A |
| HY-1 | D | F | G | F | P | Q | E | E | F | D | G | N | Q | F | Q | K | A |
| HY-2 | D | F | G | F | P | Q | E | E | F | D | G | N | Q | F | Q | K | A |
| HY-3 | D | F | G | F | P | Q | E | E | F | * | G | N | Q | F | Q | K | A |
| | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 |
| Alpha 2c | E | T | I | P | V | L | H | E | M | I | Q | Q | I | F | N | L | F |
| Alpha 21b | Q | A | I | S | V | L | H | E | M | I | Q | Q | T | F | N | L | F |
| HY-1 | Q | A | I | S | V | L | H | E | M | I | Q | Q | T | F | N | L | F |
| HY-2 | Q | A | I | S | V | L | H | E | M | I | Q | Q | T | F | N | L | F |
| HY-3 | E | T | I | P | V | L | H | E | M | I | Q | Q | I | F | N | L | F |
| | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 |
| Alpha 2c | S | T | K | D | S | S | A | A | W | D | E | T | L | L | D | K | F |
| Alpha 21b | S | T | K | D | S | S | A | A | T | W | E | S | L | L | E | K | F |
| HY-1 | S | T | K | D | S | S | A | A | A | W | D | E | T | L | L | D | F |
| HY-2 | S | T | K | D | S | S | A | A | T | W | E | S | L | L | E | K | F |
| HY-3 | S | T | K | D | S | S | A | A | A | W | D | E | T | L | L | D | F |
| | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 | 101 | 102 |
| Alpha 2c | Y | T | E | L | Y | Q | Q | L | N | D | L | E | A | C | V | I | Q |
| Alpha 21b | S | T | E | L | N | Q | Q | L | N | D | L | E | A | C | V | I | Q |
| HY-1 | Y | T | E | L | Y | Q | Q | L | N | D | L | E | A | C | V | I | Q |
| HY-2 | S | T | E | L | N | Q | Q | L | N | D | L | E | A | C | V | I | Q |
| HY-3 | Y | T | E | L | Y | Q | Q | L | N | D | L | E | A | C | V | I | Q |
| | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 |
| Alpha 2c | G | V | G | V | T | E | T | P | L | M | K | E | D | S | I | L | A |
| Alpha 21b | E | V | G | V | E | E | T | P | L | M | N | V | D | S | I | L | A |
| HY-1 | G | V | G | V | T | E | T | P | L | M | K | E | D | S | I | L | A |
| HY-2 | G | V | G | V | T | E | T | P | L | M | K | E | D | S | I | L | A |
| HY-3 | E | V | G | V | E | E | T | P | L | M | N | V | D | S | I | L | A |
| | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 |
| Alpha 2c | V | R | K | Y | F | Q | R | I | T | L | Y | L | K | E | K | K | Y |
| Alpha 21b | V | K | K | Y | F | Q | R | I | T | L | Y | L | T | E | K | K | Y |
| HY-1 | V | R | K | Y | F | Q | R | I | T | L | Y | L | K | E | K | K | Y |
| HY-2 | V | R | K | Y | F | Q | R | I | T | L | Y | L | K | E | K | K | Y |
| HY-3 | V | K | K | Y | F | Q | R | I | T | L | Y | L | T | E | K | K | Y |
| | 137 | 138 | 139 | 140 | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 |
| Alpha 2c | S | P | C | A | W | E | V | V | R | A | E | I | M | R | S | F | S |
| Alpha 21b | S | P | C | A | W | E | V | V | R | A | E | I | M | R | S | F | S |
| HY-1 | S | P | C | A | W | E | V | V | R | A | E | I | M | R | S | F | S |
| HY-2 | S | P | C | A | W | E | V | V | R | A | E | I | M | R | S | F | S |
| HY-3 | S | P | C | A | W | E | V | V | R | A | E | I | M | R | S | F | S |
| | 154 | 155 | 156 | 157 | 158 | 159 | 160 | 161 | 162 | 163 | 164 | 165 | 166 | | | | |
| Alpha 2c | L | S | T | N | L | Q | E | S | L | R | S | K | E | | | | |
| Alpha 21b | L | S | K | I | F | Q | E | R | L | R | S | K | E | | | | |
| HY-1 | L | S | T | N | L | Q | E | S | L | R | S | K | E | | | | |
| HY-2 | L | S | T | N | L | Q | E | S | L | R | S | K | E | | | | |
| HY-3 | L | S | K | I | F | Q | E | R | L | R | S | K | E | | | | |

FIG. 5